

## 1 Claims

2  
3 1. Control unit with a voltage source (15) and a reference  
4 resistor (Rref), which can be connected in the required  
5 manner in series with a sensor resistor (Rsens), the value  
6 of which is a function of its temperature, with the output  
7 voltage of the voltage source (15) dropping at the sensor  
8 resistor (Rsens) and the reference resistor (Rref) in the  
9 connected state, with the reference resistor (Rref) being  
10 dimensioned such that the maximum power loss of the sensor  
11 resistor (Rsens) is within the required value range of the  
12 sensor resistor (Rsens).

13  
14 2. Control unit according to claim 1,  
15 characterized in that  
16 the voltage source (15) is configured to amplify its input  
17 voltage.

18  
19 3. Control unit according to claim 2,  
20 characterized in that  
21 the voltage source (15) has a limiter for the output  
22 voltage.

23  
24 4. Control unit according to claim 3,  
25 characterized in that  
26 the limiter is a Zener diode (D2).

27  
28 5. Control unit according to one of the preceding claims,  
29 characterized in that  
30 the voltage source (15) comprises three transistors (Q1, Q2,  
31 Q3) with a common emitter, the base current of the first  
32 transistor (Q1) being a function of a control signal (CTRL),  
33 which can be applied to the control unit (1), the base of

1 the second transistor (Q2) is connected to the collector of  
2 the first transistor (Q1) and the base of the third  
3 transistor (Q3) is connected to the collector of the second  
4 transistor (Q2).

5  
6 6. Control unit according to claim 5,  
7 characterized in that  
8 a low-pass filter (16) is disposed between the first and  
9 second transistors (Q1, Q2).

10  
11 7. Control unit according to claim 6,  
12 characterized in that  
13 the low-pass filter (16) is formed  
14 - by a capacitor (C3), which is connected to the collectors  
15 of the first and second transistors (Q1, Q2) and also to a  
16 voltage supply (4) of the voltage source (15),  
17 - by a resistor (R2), which is connected both to the  
18 collector of the first transistor (Q1) and also to a voltage  
19 supply (4) of the voltage source (15) and  
20 - by a further resistor (R1), which is connected both to the  
21 collector of the second transistor (Q2) and also to the  
22 voltage supply (4) of the voltage source (15).

23  
24 8. Control unit according to one of the preceding claims,  
25 characterized in that  
26 the reference resistor (Rref) is connected both to the  
27 output (17) of the voltage source (15) and can also be  
28 connected to the sensor resistor (Rsens).

29  
30 9. Control unit according to one of the preceding claims,  
31 which is configured such that it outputs a variable  
32 characterizing the voltage drop at the sensor resistor  
33 (Rsens) and the reference resistor (Rref) at a first output

1 (12) and that it outputs a variable characterizing the  
2 potential between the sensor resistor (Rsens) and the  
3 reference resistor (Rref) at a second output (13).

4  
5 10. Control unit according to claim 9, with which a voltage  
6 divider is provided, to which the voltage drop at the sensor  
7 resistor (Rsens) and the reference resistor (Rref) is  
8 applied on the input side and which is connected to the  
9 first output (12) on the output side.

10  
11 11. Control unit according to claim 10, with which a switch  
12 (19) is provided, which is used to control whether the  
13 voltage drop at the sensor resistor (Rsens) and the  
14 reference resistor (Rref) is applied to the voltage divider  
15 on the input side or a supply voltage (VCC) of an evaluation  
16 unit (3).

17  
18 12. Control device comprising a control unit (1) according  
19 to one of the preceding claims and an evaluation unit (3)  
20 which is configured to generate a control signal (CTRL).

21  
22 13. Control device according to claim 12, with which the  
23 evaluation unit (3) has a regulator, the regulated variable  
24 of which is the voltage drop at the sensor resistor (Rsens)  
25 and the reference resistor (Rref) and the actuating signal  
26 of which is the control signal (CTRL).